

Low Pressure "PIG," Averages Projected to Climb to Normal, and Batten Down the Hatches!

A major storm is forming over the western Pacific Ocean. The atmosphere is gearing up with a ton of moisture in place, and a 'start-up' storm that primes us for a real whopper on Friday.

I'll start off with a few highlights to illustrate what's on the way:

Blizzards and highway closures very likely with gusts over 100 mph in the Sierra
Upwards of 8 to 10 feet of snow in the coming week Sacramento/Delta area winds gusting to 50 mph through the day Friday; stronger in the north valley and at the coast
Flash flood prone rivers statewide experiencing quick rises from Thursday night through Sunday
Heavy rain for southern California, with some mountain ranges picking up over 8 inches of rain through this weekend
Another system next Tuesday and Wednesday

The main low pressure system takes up a lot of room on the screen. When I was in grad school, we called those big ones 'pigs.' This has the tight pressure gradients capable of tremendous wind damage, and white-out conditions in the higher elevations. The low is currently crossing the dateline at about 48 degrees N. By Friday, the GFS deepens it to 502 decameters at 500mb, and it stays that low for over 12 hours.

With it parked off the WA/OR at that time, this is an uncommonly powerful pattern for Northern California. The surface low will drop to 961 mb. Maybe not a 'bomb,' but certainly a pig. The first wave Thursday merges right into what occurs Friday, so most people will not notice any separation between the two. Thursday's storm moistens up the lower layers, and bring some good rain to NorCal. Snow levels will be between 5,000' and 6,000' tomorrow. By Friday night, those levels drop to about 3,000' North, 4,500' South. Saturday may provide a bit of a break in the Sacramento area, but little let up will take place in the Sierra. The Shasta area and coasts get plowed with 60 to 70 knot 850 mb winds, which translate to continuous strong south to southwest winds Thursday and Friday. This one will last a while.

A couple of model projections next. The orographic model (orographics referring to enhanced precipitation when winds hit a mountain range at the right angle) puts out the following precipitation estimates by 4pm Sunday for selected river basins and mountain ranges:

Russian	4.5"
Feather	5.5"
San Joaquin	5.5"
San Gabriels	10.5"
San Bernardino	10"

Mt. Palomar 12.5" * This is near the Poomacha burn area
Harris Fire 3-5"

Here are European and GFS (US) model projections for total precipitation for the next week (ending 4am Wednesday, Jan. 9)

Shasta/Feather	4-8"	5-7"
(latest DWR Feather River Basin 10day QPF = 10.8"; 412% of normal)		
North Coast	5-8"	6-8"
Yosemite/Mammoth	9-12"	8-9"
Sacramento area	4"	4"
Zaca Burn	4"	5-7"
Rice/Witch Fire areas	2"	4-5"

Although there are a few timing and strength issues between models, there is high confidence on the overall impact. Not just a few feet of snow will be recorded; it is likely at least 6 to 8 feet are going to come. Possibly as much as 10 feet in the central and southern Sierra.

More on the comparison to last year, and this positive news in a moment.

The Canadian is even a bit deeper with the 500mb low Friday evening.

Jet stream dynamics are in the mix, as well, with nearly 130 knot 300mb GFS90 winds ramming into Mendocino County Friday at 10am.

The upper trof axis from this main feature doesn't cross until Monday morning. But we aren't out of the woods yet, as another (although garden-variety by comparison) low comes in Tuesday and Wednesday. That one won't be as windy, nor have the same impact on southern California.

Speaking of southern California, in addition to the information above about forecasts for burn areas, the peak of the storm will hit Saturday morning. Following a rainy Friday, another couple of inches of rain is likely Saturday. Rain and moderate winds continue Sunday.

For the myriad of watches, warnings and advisories that will be coming out in the days again, go to:

<http://www.wrh.noaa.gov/cnrfc/warnings.php>

>From a flood perspective, there is substantial space available in the major reservoirs. Current statewide storage is at about 80% of average for the season; about 51% of capacity. These storms are welcome news.

And with their cold nature, the snow levels create less of a flood concern. Levels in the Shasta/ Feather/ 80/50 corridor will be near 6,000' Thursday, to 3,000' by Saturday morning. Yes, a few snow showers are possible lower than that. Next week's system will be in the 5,000' range. Although small rivers (flashy Fashion Valley, the Sisquoc, all burn areas) and unregulated coastal rivers may see rises to flood level, main stem rivers are not likely to experience significant rises. There will be modest flow over the Colusa Weir Saturday afternoon and evening, and over Tisdale Saturday night, if quantitative precipitation forecasts hold out. There will be modifications to those rain forecasts each 6 hours during the event, so river forecast guidance for days 3, 4, and 5 are for planning purposes only!

See these links, first for a quick look at what rivers may go to monitor or flood stage:

<http://www.cnrfc.noaa.gov/>

and this one for a refresher on river guidance terminology:

http://www.cnrfc.noaa.gov/graphical_rvf.php

The combination of daily high tide, increasing spring tide, gusty winds, and very low pressure put Delta tide forecasts at monitor stage at noon on Friday. The Flood Operations Branch of DWR, emergency officials, and the National Weather Service are coordinating efforts to stay prepared for any high water event through this weekend. Wind problems may be more of a factor than flooding. So will the tremendous travel mess.

Advice from weather mom; no, don't drive Friday. Really. Take down the outdoor decorations tonight, or early Thursday. Or you'll be picking them out of the trees and neighbors' roof.

This next week will likely put us back on track, seasonally. Its likely the 8 Station Index, which is the average of 8 locations in Northern California, will come close to normal for this time of year. As of this morning, 12.0" have been recorded since October 1, the start of the water year. This is 66% of average for Jan. 2. If we receive the projected 10" by January 11, or even 8.5" or 9.0", we will have climbed up to where we should be. Great news.

Planning a short newsletter tomorrow after the snow survey course measurement is taken on highway 50, with some historical comparisons.

(EL)

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